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PATENT COOPERATION TREATY

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REC'D 24 JAN 2001

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference CM1910F/JH	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US98/20491	International filing date (day/month/year) 30/09/1998	Priority date (day/month/year) 30/09/1998
International Patent Classification (IPC) or national classification and IPC C12N9/42		
Applicant THE PROCTER & GAMBLE COMPANY et al.		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 16/03/2000	Date of completion of this report 22.01.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer BULCAO DE MELO ..., T Telephone No. +49 89 2399 8972 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US98/20491

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*

Description, pages:

1-109 as originally filed

Claims, No.:

1-29 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US98/20491

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 4, 6, 10-13 and 17-23
	No:	Claims 1-3, 5, 7-9, 14-16 and 24-29
Inventive step (IS)	Yes:	Claims
	No:	Claims 4, 6, 10-13 and 17-23
Industrial applicability (IA)	Yes:	Claims 1-29
	No:	Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

1. Reference is made to the following documents:

D1: WO-A-97 24427

D2: WO-A-96 13524

D3: WO-A-98 00500

SECTION V

2. Novelty (**Article 33(2) PCT**)

The present application does not satisfy the criterion set forth in **Article 33 (2) PCT** because the subject-matter of **claims 1-3, 5, 7-9, 14-16 and 24-29** is considered to be part of the prior art as defined in the regulations (**Rule 64 (1)-(3) PCT**).

- 2.1. Document **D1** discloses an endoglucanase enzyme immobilized by a covalent binding on a water soluble polymer, namely polyethylene glycol. Said endoglucanase enzyme is derived from *Humicola insolens* and can be bound indirectly on said polymer via a spacer. Moreover, D1 discloses detergent and/or fabric softener compositions comprising said immobilized enzyme, a cationic surfactant and other ingredients. D1 further discloses methods of treating and cleaning a fabric with said immobilized enzyme and/or said compositions.

(See Abstract; page 11, last paragraph-page 13, last paragraph; page 42, lines 1-10 example 1 and claims).

Therefore, the subject-matter of **claims 1-3, 5, 14, 15 and 24-29** is not new over **D1**.

- 2.2. Document **D2** discloses a modified cellulose-binding domain (CBD) molecule in which the CBD molecule is linked to a hapten moiety, such as biotin, via one or more lysine residues. Said CBD molecule is derived from a cellulose- or xylan-degrading CBD-containing microorganism such as *Clostridium cellulovorans*.

(See Abstract; example 3 and claims).

Therefore, the subject-matter of **claims 1,2, 7 and 16** is not new over **D2**.

- 2.3. Document **D3** discloses a composition comprising a protein deposition aid linked to a benefit agent, wherein said deposition aid is a cellulose binding domain (CBD) and the benefit agent is for example a fabric softening agent, a perfume, a latex, a resin, a dye fixating agent, an insecticide or a soil release agent. The benefit agent can be

linked to the deposition aid via a linking agent. Moreover D3 discloses detergent compositions comprising the above composition, a cationic surfactant and other ingredients. D3 further discloses methods of treating and cleaning a fabric with said compositions.

(See Abstract; page 4, line 2-page 5, line 12; page 7, lines 22-23; page 8, line 8-page 16, line 6; examples and claims).

Therefore, the subject-matter of **claims 1-3, 5, 8, 9 and 24-29** is not new over **D3**.

3. Inventive Step (Article 33 (3) PCT)

Claims 4, 6, 10-13 and 17-23 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step.

4. Industrial Applicability (Article 33(4) PCT)

The subject-matter of present **claims 1-29** is susceptible of industrial applicability as defined in **Article 33 (4) PCT**.

SECTION VIII

5. The present application does not satisfy the criterion set forth in **Article 6 PCT** because the following claims are not clear.

5.1. The term "CBD" renders **claims 14-16** unclear. Said terms is regarded as an acronym and should therefore be clarified.

5.2. It appears that the dependency of **claim 17** on claim 2 is not correct. Claim 17 refers to the linking region whereas in claim 2 the components are linked directly, i.e. there is no linking region involved.

SECTION VII

6. Contrary to the requirements of **Rule 5.1(a)(ii) PCT**, the relevant background art disclosed in documents **D1 and D2** is not mentioned in the description, nor are these documents identified therein.

PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CM1910F/JH	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 98/ 20491	International filing date (day/month/year) 30/09/1998	(Earliest) Priority Date (day/month/year)
Applicant THE PROCTER & GAMBLE COMPANY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

LAUNDRY DETERGENT AND/OR FABRIC CARE COMPOSITIONS COMPRISING CHEMICAL COMPONENTS LINKED TO A CELLULOSE BINDING DOMAIN

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/20491

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N9/42 C11D3/386 D06M16/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C12N C11D D06M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 24427 A (PROCTER & GAMBLE) 10 July 1997 see abstract see example 1 ---	1,2,24, 25,27-29
X	WO 96 13524 A (YEDA RES & DEV ;UNIV RAMOT (IL); TECHNION RES & DEV FOUNDATION (IL) 9 May 1996 see example 3 ---	1,2,5,7
A	WO 98 00500 A (UNILEVER PLC ;UNILEVER NV (NL)) 8 January 1998 cited in the application see abstract see page 4 - page 5 --- -/--	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

28 May 1999

Date of mailing of the international search report

07/06/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Lejeune, R

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/20491

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 96 40831 A (PROGUARD INC ;EMERSON RALPH W (US); CRANDALL BRADFORD G JR (US)) 19 December 1996 see example 3 -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/20491

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9724427	A	10-07-1997	AU 4744996 A EP 0877787 A JP 11502256 T	28-07-1997 18-11-1998 23-02-1999
WO 9613524	A	09-05-1996	AU 4011495 A	23-05-1996
WO 9800500	A	08-01-1998	AU 3438197 A	21-01-1998
WO 9640831	A	19-12-1996	AU 4691196 A BR 9508562 A CA 2196975 A CN 1159819 A EP 0801666 A	30-12-1996 25-11-1997 19-12-1996 17-09-1997 22-10-1997